

**What is Claimed is:**

1. A method of detecting and/or identifying analytes comprising:
  - a) obtaining one or more probe molecules that bind to one or more target analytes;
  - b) attaching the probe molecules to one or more cantilevers;
  - c) exposing the probe molecules to at least one sample suspected of containing one or more target analytes;
  - d) deflecting the cantilever; and
  - e) imposing a counterbalancing force to restore the cantilever to its original position.
2. The method of claim 1, wherein the target analytes have a net electrical charge.
3. The method of claim 2, wherein the cantilever is deflected in response to an electrical potential gradient.
4. The method of claim 1, wherein the cantilever is deflected in response to a change in surface tension.
5. The method of claim 1, wherein the target analytes are selected from the group consisting of an amino acid, peptide, polypeptide, protein, glycoprotein, lipoprotein, antibody, nucleoside, nucleotide, oligonucleotide, nucleic acid, sugar, carbohydrate, oligosaccharide, polysaccharide, fatty acid, lipid, hormone, metabolite, growth factor, cytokine, chemokine, receptor, neurotransmitter, antigen, allergen, antibody, substrate, metabolite, cofactor, inhibitor, drug, pharmaceutical, nutrient, biohazardous agent, infectious agent, prion, vitamin, heterocyclic aromatic compound, carcinogen, mutagen, waste product, virus, bacterium, *Salmonella*, *Streptococcus*, *Legionella*, *E. coli*, *Giardia*, *Cryptosporidium*, *Rickettsia*, spore, mold, yeast, algae, amoebae, dinoflagellate, unicellular organism, pathogen, prion and a cell.
6. The method of claim 1, wherein the probe molecules are selected from the group consisting of antibodies, antibody fragments, single-chain antibodies, genetically engineered antibodies, oligonucleotides, polynucleotides, nucleic acids, nucleic acid analogues, peptide nucleic acids, proteins, peptides, synthetic peptides, binding proteins, receptor proteins, transport proteins, lectins, substrates, inhibitors, activators, ligands, hormones, neurotransmitters, growth factors and cytokines.
7. The method of claim 1, wherein the probe molecules are oligonucleotides and the target analytes are nucleic acids.

8. The method of claim 1, wherein the target analytes are proteins or peptides.
9. The method of claim 8, wherein the probe molecules are antibodies, antibody fragments, genetically engineered antibodies or single chain antibodies.
10. The method of claim 1, wherein the counterbalancing force is magnetic.
11. The method of claim 1, wherein the counterbalancing force is electrical.
12. The method of claim 1, wherein the counterbalancing force is radiative.
13. The method of claim 12, wherein the cantilever is attached to a transparent object with a curved surface.
14. The method of claim 12, wherein a light beam is directed against a planar surface of the cantilever.
15. An apparatus comprising:
  - a) at least one cantilever;
  - b) at least one probe molecule attached to the cantilever;
  - c) a first electrode on one side of the cantilever;
  - d) a second electrode on the other side of the cantilever; and
  - d) a direct current power supply operably coupled to the first and second electrodes.
16. The apparatus of claim 15, further comprising an information processing and control system.
17. The apparatus of claim 15, wherein the information processing and control system is a computer.
18. The apparatus of claim 15, further comprising a detection unit to detect deflection of the cantilever.
19. The apparatus of claim 18, wherein the detection unit comprises a laser and a position sensitive photodetector.
20. The apparatus of claim 18, wherein the detection unit comprises a piezoelectric detector, a piezoresistive detector or a piezomagnetic detector.
21. The apparatus of claim 15, further comprising an electromagnet attached to the cantilever.
22. The apparatus of claim 21, further comprising a second power supply operably coupled to the electromagnet.
23. The apparatus of claim 22, wherein the second power supply is controlled by a computer.
24. The apparatus of claim 15, further comprising an inducible charge storage layer attached to the cantilever.

25. The apparatus of claim 24, further comprising a second power supply operably coupled to the inducible charge storage layer.
26. The apparatus of claim 25, wherein the second power supply is controlled by a computer.
27. The apparatus of claim 15, further comprising a transparent object with a curved surface attached to the cantilever.
28. The apparatus of claim 27, further comprising a laser and an objective lens.
29. The apparatus of claim 18, further comprising a computer operably coupled to the detection unit.
30. The apparatus of claim 15, further comprising an array of cantilevers, each attached to a different type of probe molecule.
31. A method of detecting and/or identifying analytes comprising:
- a) obtaining one or more probe molecules that bind to one or more target analytes;
  - b) attaching one or more target analytes to one or more cantilevers;
  - c) exposing the target analytes to the probe molecules;
  - d) deflecting the cantilever; and
  - e) imposing a counterbalancing force to restore the cantilever to its original position.
32. The method of claim 31, wherein the target analytes are selected from the group consisting of an amino acid, peptide, polypeptide, protein, glycoprotein, lipoprotein, antibody, nucleoside, nucleotide, oligonucleotide, nucleic acid, sugar, carbohydrate, oligosaccharide, polysaccharide, fatty acid, lipid, hormone, metabolite, growth factor, cytokine, chemokine, receptor, neurotransmitter, antigen, allergen, antibody, substrate, metabolite, cofactor, inhibitor, drug, pharmaceutical, nutrient, biohazardous agent, infectious agent, prion, vitamin, heterocyclic aromatic compound, carcinogen, mutagen, waste product, virus, bacterium, *Salmonella*, *Streptococcus*, *Legionella*, *E. coli*, *Giardia*, *Cryptosporidium*, *Rickettsia*, spore, mold, yeast, algae, amoebae, dinoflagellate, unicellular organism, pathogen and a cell.
33. The method of claim 31, wherein the probe molecules are selected from the group consisting of antibodies, antibody fragments, single-chain antibodies, genetically engineered antibodies, oligonucleotides, polynucleotides, nucleic acids, nucleic acid analogues, peptide nucleic acids, proteins, peptides, binding proteins, receptor proteins, transport proteins, lectins,

substrates, inhibitors, activators, ligands, hormones, neurotransmitters, growth factors and cytokines.